



Surface water storage requirements for sites

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Calculated by:	Alan Mills
Site name:	Sunnycott Caravan Park
Site location:	Gurnard

Site Details

Latitude:	50.74197° N
Longitude:	1.33478° W
Reference:	1716411960
Date:	Feb 26 2024 11:33

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

Site characteristics

Total site area (ha):	0.8
Significant public open space (ha):	0.78
Area positively drained (ha):	0.0200000000000000018
Impermeable area (ha):	0.02
Percentage of drained area that is impermeable (%):	100
Impervious area drained via infiltration (ha):	0
Return period for infiltration system design (year):	100
Impervious area drained to rainwater harvesting (ha):	0
Return period for rainwater harvesting system (year):	100
Compliance factor for rainwater harvesting system (%):	66
Net site area for storage volume design (ha):	0.02
Net impermeable area for storage volume design (ha):	0.02
Pervious area contribution to runoff (%):	30

Methodology

esti	IH124
Q _{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	88.55
FEH / FSR conversion factor:	1.15	1.15
SAAR (mm):	794	794
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	7	7

* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q_{BAR} and other flow rates will have been reduced accordingly.

Growth curve factor 1 year:

0.85

0.85

Growth curve factor 10 year:

1.62

1.62

Growth curve factor 30 year:

2.3

2.3

Growth curve factor 100 years:

3.19

3.19

Q_{BAR} for total site area (l/s):

4.48

4.48

Q_{BAR} for net site area (l/s):

0.11

0.11

Design criteria

Climate change allowance factor:

1.4

Urban creep allowance factor:

1.1

Volume control approach

Use long term storage

Interception rainfall depth (mm):

5

Minimum flow rate (l/s):

2

Site discharge rates

1 in 1 year (l/s):

2

Edited

2

1 in 30 years (l/s):

2

2

1 in 100 year (l/s):

2

2

Estimated storage volumes

Attenuation storage 1/100 years (m³):

3

3

Long term storage 1/100 years (m³):

0

0

Total storage 1/100 years (m³):

3

3

This report was produced using the storage estimation tool developed by HRWallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at <http://uksuds.com/terms-and-conditions.htm>. The outputs from this tool have been used to estimate storage volume requirements. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.